

**REMARKS**

Claims 1-2, 6-7, 11-14, 16-20 and 22-26 remain pending in the above-identified application and stand ready for further action on the merits. In the instant amendment, claims 1-2, 6-7, 11-14, 16-20, and 22-24 are amended and new claims 25-26 are added.

The amendments made to the pending claims 1-2 do not incorporate new matter into the application as originally filed. Claims 1-2 as instantly amended incorporate subject matter finding support in claim 13 (*as previously pending*) and are additionally based on disclosure in the original specification at page 27, lines 17-20.

The amendments to claims 6-7, 11-13, 16-20 and 22-24 are made to make the preambles thereof agree with independent claim 1 (*as instantly amended*). Claim 14 is rewritten into an independent format, based on the amendment of claim 1 herein.

New claims 25-26 also find support in the specification as originally filed, including page 26, line 25 to page 27, line 4, wherein it is described:

*The paper quality improver for papermaking according to the invention, i.e., the copolymer (A) and surfactant (B), or alternatively the copolymer (A), the surfactant (B) and the water-soluble polymer (c), may be added as a mixture in the papermaking step or separately in the papermaking step. In particular, the copolymer (A) and the surfactant (B) are added preferably as a mixture.*

Accordingly, entry of the instant amendment is respectfully requested at present, as is favorable action on the merits.

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***Claim Rejections – 35 USC §§ 102(b), 102(e) and 103(a)***

Claims 1-2, 7, 11-12, 14, 16-20 and 22-24 are rejected under 35 USC § 102(e) as being anticipated by, or alternatively under 35 USC § 103(a) as obvious over **Branham et al. US ‘569** (US 2003/0022568 A1) as evidenced by **Xiao et al. US ‘392** (US 5,747,392).

Claims 1-2, 6-7, 11-14, 16-20 and 22-24 are rejected under 35 USC § 102(b) as being anticipated by, or alternatively under 35 USC § 103(a) as obvious over **Zhang et al. US ‘268** (US 6,417,268) as evidenced by **Xiao et al. US ‘392** (US 5,747,392) and **Smook** (Handbook for Pulp and Paper Technologists).

Reconsideration and withdraw of each of the above rejections is respectfully requested based on the following considerations.

**Legal Standard for Determining Anticipation**

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis*

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*verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

*Legal Standard for Determining Prima Facie Obviousness*

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the

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proposed substitution, combination, or other modification.” *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. “The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The Supreme Court of the United States has recently held that the teaching, suggestion, motivation test is a valid test for obviousness, but one which cannot be too rigidly applied. See *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct 1727, 82 USPQ2d 1385 (U.S. 2007). The Supreme Court in *KSR Int’l Co. v. Teleflex, Inc.*, *ibid.*, reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. § 103(a). The four factual inquiries under Graham are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

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*Graham v. John Deere*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (U.S. 1966).

The Court in *KSR Int'l Co. v. Teleflex, Inc.*, *supra.*, did not totally reject the use of "teaching, suggestion, or motivation" as a factor in the obviousness analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Even so, the Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

Further, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

*Distinctions Over the Cited Art*

*Branham et al. US '569*

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Branham's invention relates to a water dispersible cationic polymer and fiber-containing fabrics and webs. In Branham, the polymer is used as binders for fabrics, *see* paragraph [0010] thereof, which is reproduced below for the Examiner's convenience.

*[0010] The polymer formulations of the present invention are useful as binders and structural components for air-laid and wet-laid nonwoven fabrics for applications, such as body-side liners, fluid distribution materials, fluid in-take materials (surge) or cover stock in various personal care products. The polymer formulations of the present invention are particularly useful as a binder material for flushable personal care products, particularly wet wipes for personal use, such as cleaning or treating skin, make-up removal, nail polish removal, medical care, and also wipes for use in hard surface cleaning, automotive care, including wipes comprising cleaning agents, disinfectants, and the like. The flushable products maintain integrity or wet strength during storage and use, and break apart or disperse after disposal in the toilet when the salt or ion concentration falls below a critical level. Suitable substrates for treatment include tissue, such as creped or uncreped tissue, coform products, hydroentangled webs, airlaid mats, fluff pulp, nonwoven webs, and composites thereof. Methods for producing uncreped tissues and molded three-dimensional tissue webs of use in the present invention can be found in commonly owned U.S. patent application, Ser. No. 08/912,906, "Wet Resilient Webs and Disposable Articles Made Therewith," by F. -J. Chen et al., filed Aug. 15, 1997; U.S. Pat. No. 5,429,686, issued to Chiu et al. on Jul. 4, 1995; U.S. Pat. No. 5,399,412, issued to S. J. Sudall and S. A. Engel on Mar. 21, 1995; U.S. Pat. No. 5,672,248, issued to Wendt et al. on Sep. 30, 1997; and U.S. Pat. No. 5,607,551, issued to Farrington et al. on Mar. 4, 1997; all of which are incorporated herein by reference in their entirety. The molded tissue structures of the above patents can be especially helpful in providing good cleaning in a wet wipe. Good cleaning can also be promoted by providing a degree of texture in other substrates as well by embossing, molding, wetting and through-air drying on a textured fabric, and the like. The cationic polymers and polymer formulations of the present invention are particularly useful as a binder for fibrous materials because the polymers and polymer formulations are substantive to the fibers.*

In addition, as shown at page 20, paragraphs [0170]-[0176] (*reproduced below for the Examiner's convenience*), after adding the polymer composition to a fibrous substrate, the

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substrate is dried, and then, after a paper was made, a wetting composition which can include a surfactant, is finally added to the paper/ the substrate.

*[0170] Method of Making Wet Wipes*

*[0171] The pre-moistened wipes of the present invention can be made in several ways. In one embodiment, the triggerable polymer composition is applied to a fibrous substrate as part of an aqueous solution or suspension, wherein subsequent drying is needed to remove the water and promote binding of the fibers. In particular, during drying, the binder migrates to the crossover points of the fibers and becomes activated as a binder in those regions, thus providing acceptable strength to the substrate. For example, the following steps can be applied:*

*[0172] 1. Providing an absorbent substrate that is not highly bonded (e.g., an unbonded airlaid, a tissue web, a carded web, fluff pulp, etc.).*

*[0173] 2. Applying a triggerable polymer composition to the substrate, typically in the form of a liquid, suspension, or foam.*

*[0174] 3. Drying the substrate to promote bonding of the substrate. The substrate may be dried such that the peak substrate temperature does not exceed about 100° to 220°C. In one embodiment, the substrate temperature does not exceed 60°C. to 80°C.*

*[0175] 5. Applying a wetting composition to the substrate.*

*[0176] 6. Placing the wetted substrate in roll form or in a stack and packaging the product.*

In contrast, in the instantly claimed process, the polymer and surfactant are added before a papermaking step, where in the paper quality improver is added anywhere before the papermaking step when a paper layer is formed while water in a dilute solution of a pulp material is filtered through a wire while moving thereon. Importance for the polymer and surfactant to be

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simultaneously in water/pulp slurry before a papermaking step is showed at page 10, line 8 through page 11, line 6 of the instant specification, which discloses as follows:

*The mechanisms underlying the advantageous effects of the invention are yet to be understood, but seem to be the followings: When the copolymer (A) according to the invention is added to a pulp slurry, the anionic and cationic portions of the electric charge-carrying copolymer (A) are adsorbed on the pulp fiber, while the structure therein derived from a nonionic monomer having a solubility parameter of  $20.5 \text{ (MPa)}^{1/2}$  or less, which is hydrophobic in nature, stick its hydrophobic portion out of the surface, hydrophobizing the pulp surface. As a result, the interfacial tension between pulp and aqueous solution increases, expanding the distance among pulps during papermaking and hence leading to a bulkier pulp sheet and improvement in opacity and brightness due to increase in optical reflectance. However, under a high-speed papermaking or a high-shear-force condition, adsorption of the copolymer (A) on the pulp becomes heterogeneous, resulting in inadequate hydrophobization of the pulp surface and smaller improvement in bulky value. It seems that the interaction between the copolymer (A) and the surfactant (B) enables efficient adsorption of the copolymer (A) on the pulp surface and consequently efficient hydrophobization of the pulp surface even under the high-shear condition. In addition, uniform distribution of the copolymer (A) on the pulp surface and adsorption thereof in the microparticlar state seem to be also responsible for the increase in paper strength.*

Zhang et al. US '268

In Zhang et al., the surfactant is added to monomer solution in order to solubilize the hydrophobic monomer into an aqueous phase for polymerization. This is very distinct from the invention as instantly claimed, wherein in the claimed process of producing a pulp sheet:

*...the paper quality improver is added anywhere before the papermaking step when a paper layer is formed while water in a dilute solution of a pulp material is filtered through a wire while moving thereon. (See claims 1-2.)*

Additionally, the cited primary Zhang et al. US '268 reference discloses surfactants such as salts of alkyl sulfates, sulfonates and carboxylates (e.g., see at column 9, lines 62-67 of Zhang



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et al.) but it completely fails to disclose or teach anything about “a water-soluble alcohol alkylene oxide adduct containing an alkylene oxide group having 2 to 4 carbons in an average amount of 5 to less than 150 moles per 1 mole of the alcohol,” as positively recited in each of pending independent claims 1-2.

*Xiao et al. US ‘392 and Smook*

In setting forth rejections in the outstanding office action, the USPTO relies on Xiao et al. US ‘392 to show that acrylamide is a crosslinkable monomer (*see page 8, lines 17-18 of Office Action*), and relies on Smook to show a papermaking speed as being typical (*see page 9, line 19 of Office Action*). As such, the references of Xiao et al. US ‘392 and Smook are incapable of curing the above-noted deficiencies of the cited art of Branham et al. US ‘569 and Zhang et al. US ‘268.

The outstanding rejections of record are not sustainable for the reasons set forth hereinabove. Any contentions of the USPTO to the contrary must be reconsidered at present.

*Provisional Request for Interview*

*Should the instant reply not result in an allowance of claims 1-2, 6-7, 11-14, 16-20 and 22-26 under consideration at present, the undersigned respectfully requests that the Examiner grant/schedule a personal interview at the Examiner’s earliest convenience, by contacting the undersigned (Mr. John W. Bailey, Reg. No. 32,881, at 703-205-8031).*

*It is submitted that such an interview would be helpful in allowing Applicants to more distinctly and particularly discuss the remarks set forth herein with the Examiner, and explain why the cited art is incapable of rendering pending claims 1-2, 6-7, 11-14, 16-20 and 22-26*

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*unpatentable, and thereby help expedite further prosecution of this application to allowance.*

**CONCLUSION**

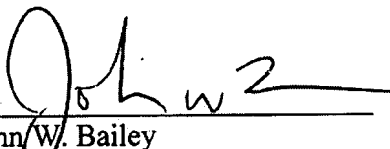
Based on the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance in the matter of the instant application, clearly indicating that each of pending claims 1-2, 6-7, 11-14, 16-20 and 22-26 are allowed and patentable under the provisions of title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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